SEARS

owner's manual

MODEL NO. 536.297023

CAUTION:

Read INSTRUCTIONS carefully

MADE IN U.S.A.

6000 Creek Rd
741-4535

SEARS / CRAFTSMAN®

10" - 1.6 H.P. TILLER/CULTIVATOR

- **Assembly**
- **Operation**
- **Maintenance**
- **Repair Parts**

Sold by *Sears, Roebuck and Co.*, Chicago, IL 60684

Part No. 63018

4/87

CRAFTSMAN WARRANTY

CRAFTSMAN WARRANTY

ONE YEAR LIMITED WARRANTY ON CRAFTSMAN TILLER/CULTIVATOR

For one year from date of purchase, when this tiller/cultivator is maintained, lubricated, and tuned up according to the operating and maintenance instructions in the owner's manual, Sears will repair free of charge any defect in material or workmanship.

This warranty excludes tine(s), spark plug, and air cleaner, which are expendable parts and become worn during normal use.

If this tiller/cultivator is used for commercial or rental purposes, this warranty applies for only 30 days from the date of purchase.

WARRANTY SERVICE IS AVAILABLE BY CONTACTING THE NEAREST SEARS SERVICE CENTER/DEPARTMENT IN THE UNITED STATES. This warranty applies only while this product is in use in the United States.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

SEARS, ROEBUCK AND CO. DEPT. 698/731A SEARS TOWER CHICAGO, IL 60684

OWNER'S INFORMATION

Record the following information about your unit so that you will be able to provide it in case of loss or theft.

DATE PURCHASED _____ MODEL NO **536.297023** CODE NO. _____

STORE WHERE PURCHASED ADDRESS _____

CITY _____ STATE _____ TELEPHONE _____

MAINTENANCE AGREEMENT

A **Sears Maintenance Agreement** is available on this product. Contact your nearest Sears store for details.

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Look for this symbol. It means - ATTENTION! BECOME ALERT! A HAZARD TO OPERATOR, BYSTANDERS, PROPERTY OR EQUIPMENT MAY EXIST.

OPERATIONAL PRECAUTIONS

THESE INSTRUCTIONS ARE FOR YOUR PROTECTION. PLEASE READ THEM CAREFULLY.

TRAINING

1. Read the Owner's Manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instructions.
3. Keep the area of operation clear of all persons, particularly small children, and pets.

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used and remove all foreign objects.
2. Do not operate the equipment without wearing adequate outer garments. Wear footwear which will improve footing on slippery surfaces.
4. Handle fuel with care; it is highly flammable.
   (a) Use an approved fuel container.
   (b) Never add fuel to a running engine or hot engine.
   (c) Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
   (d) Replace gasoline cap securely and clean up spilled fuel before restarting.
4. Never attempt to make any adjustments while the engine is running (except where specifically recommended by manufacturer).

OPERATION

1. Do not put hands or feet near or under rotating parts.
2. Exercise extreme caution when operating on or crossing gravel drives, walks, roads. Stay alert for hidden hazards or traffic.
3. After striking a foreign object, stop the engine. Disconnect the spark plug wire, and keep the wire away from the plug to prevent accidental starting. Thoroughly inspect the tiller for any damage, and repair the damage before restarting and operating the tiller.
4. Exercise caution to avoid slipping or falling.
5. If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
6. Stop the engine whenever you leave the operating position. Also disconnect spark plug wire before unclogging the tines and when making any repairs, adjustments, and inspections.
7. Take all possible precautions when leaving the machine unattended. Stop the engine.
8. Before cleaning, repairing, or inspecting, shutoff the engine and make certain all moving parts have stopped.
9. NEVER run engine indoors. Exhaust fumes contain CARBON MONOXIDE which is an ODORLESS and DEADLY POISONOUS GAS.
10. Never operate the tiller without proper guards, plates, or other safety protective devices in place.
11. Keep children and pets away.
12. Do not overload the machine capacity by attempting to till too deep at too fast a rate.
13. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.
14. Never allow bystanders near unit.
15. Never operate the tiller without good visibility or light.

MAINTENANCE AND STORAGE

1. Keep machine, in safe working condition. Check all fasteners at frequent intervals for proper tightness.
2. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water and space heaters, clothes dryers, etc. Allow the engine to cool before storing in any enclosure.
3. Always refer to the Owner's Manual for important details if the tiller is to be stored for an extended period.

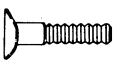
CONTENTS OF SHIPPING CARTON

1 - 10 inch Tiller/Cultivator
1 - Upper Handle
1 - Right Lower Handle
1 - Left Lower Handle
1 - Owner's Manual
1 - Bag of Assembly Parts Containing:

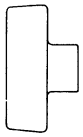
6 - Formed (curved) Washers

4 - ¼ x 1⅜ inch Hex Head Screws

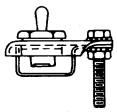
4 - ¼ inch Locknuts

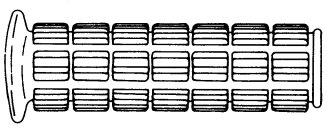

2 - 5/16 x 1⅝ inch Curved Head Carriage Bolts

2 - 11/32 inch Flatwashers


2 - Tee Knobs

1 - No. 10 x 1½ inch Self-Tap Screw


1 - Switch Assembly


2 - Hand Grips

2 - Cable Tie Straps

TOOLS REQUIRED FOR ASSEMBLY

1 - 5/16 inch Wrench (or adjustable wrench)
1 - 3/8 inch Wrench (or adjustable wrench)
2 - 7/16 inch Wrenches (or adjustable wrenches)
1 - Phillips Screwdriver
1 - Pair Scissors

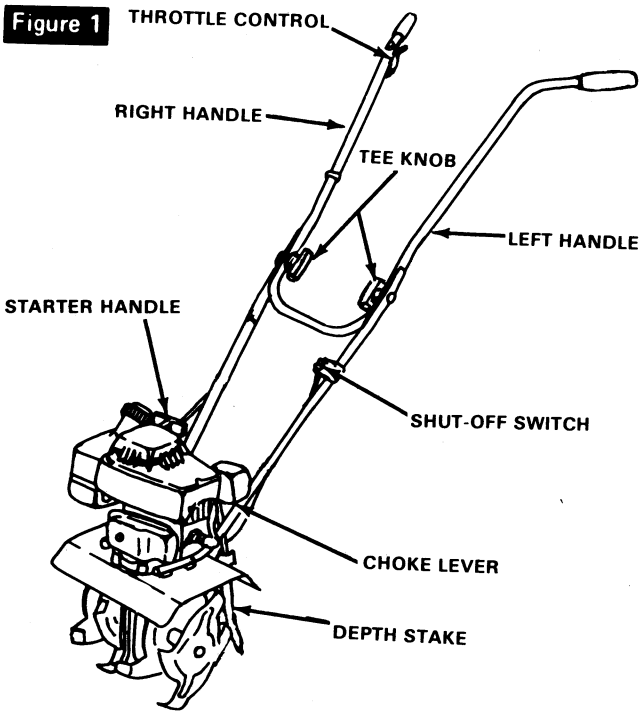
CAUTION

- **READ THE OPERATOR'S MANUAL.**
- **KNOW LOCATION AND FUNCTIONS OF ALL CONTROLS.**
- **KEEP ALL SAFETY DEVICES & SHIELDS IN PLACE.**
- **NEVER ALLOW CHILDREN OR UNINSTRUCTED ADULTS TO OPERATE TILLER.**
- **SHUT OFF ENGINE BEFORE UNCLOGGING TINES OR MAKING REPAIRS.**
- **KEEP BYSTANDERS AWAY FROM MACHINE.**
- **KEEP AWAY FROM ROTATING PARTS.**

ASSEMBLY

Your tiller/cultivator is completely assembled except for handles and controls. Figure 1 shows tiller/cultivator completely assembled. **NOTE:** The right and left sides of your tiller/cultivator are determined from operator's position behind unit.

Figure 1



HANDLE ASSEMBLY

Lower handles have short bend at bottom end and curved at top end to allow upper handle to be placed between lower handles. Left lower handle has a choke decal on it. **To complete assembly, proceed as follows:**

1. Unwind throttle control from around engine and straighten cable. **NOTE:** Use care that you do not kink cable.

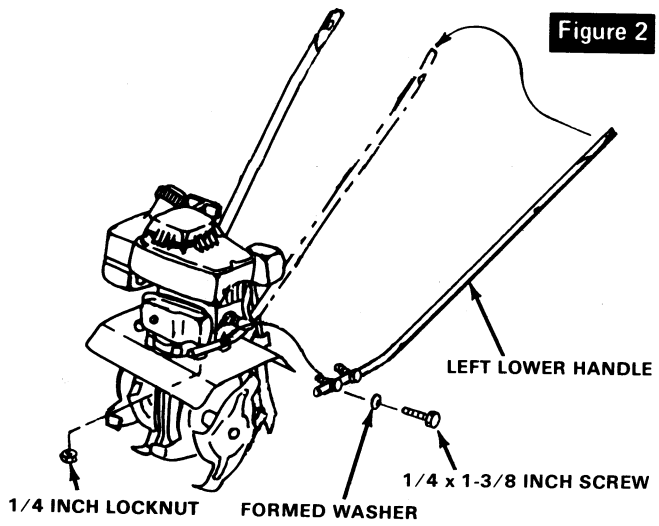
2. Place a formed washer onto each of two ¼ x 1⅜ inch screws.

3. Place two screws (with formed washers) down through two holes in lower handle. **NOTE:** Attaching lower handle may be easier if tines are removed (see **Tine Replacement** paragraph in **Adjustments/Repairs** section of this manual.

4. Place handle at an angle under engine side and then rotate handle and push screws down through engine casting and tine shield (figure 2). Secure with two ¼ inch locknuts. Tighten finger tight only at this time.

5. Repeat steps 2 through 4 with lower handle on opposite side.

Figure 2

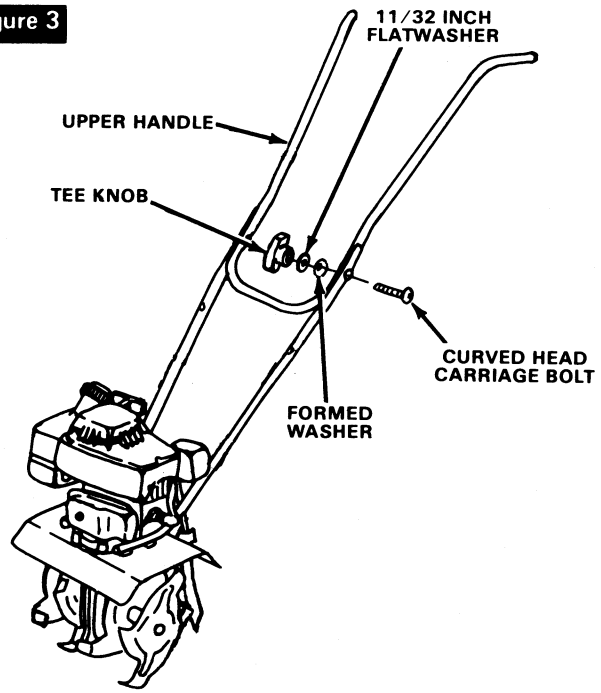


6. Place upper handle between lower handles (figure 3) and secure with two curved head carriage bolts, two formed washers, two 11/32 inch flatwashers and two tee knobs on inside of handle. Tighten finger tight only. **NOTE:** Lower handles have two holes at top end to allow upper handle to be positioned at two different heights.

7. Using a 7/16 inch wrench, tighten locknuts on screws in lower ends of lower handles just enough to hold lower handles firmly in place. **CAUTION: Overtightening screws enough to change shape of handles can result in engine casting damage.**

8. Hold curved head carriage bolt against outside of lower handle while tightening tee knobs securely.

Figure 3

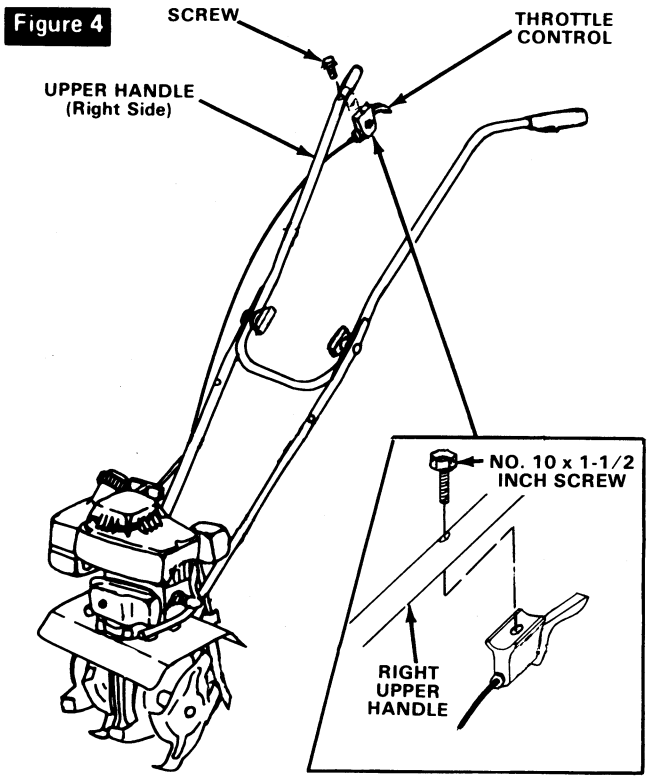


THROTTLE CONTROL ASSEMBLY

1. Place a No. 10 x 1½ inch hex head screw down through hole in upper handle right side and attach throttle control to underside of handle as shown in figure 4.

2. Attach throttle cable to right lower handle by threading a tie strap through hole in lower handle and around throttle cable on outside of handle.

Figure 4



3. Thread pointed end of strap through other (square) end of strap and pull tight around switch wire and lower handle. **NOTE:** One side of tie strap is rough, other side is smooth. Rough side must be on inside of loop formed when ends are put together.

4. Try to loosen strap. If it will loosen, it is put together with smooth side to inside of loop. Remove strap and reverse direction.

5. Cut off excess tie strap.

6. Push a hand grip onto each side of upper handle.

SHUT-OFF SWITCH ASSEMBLY

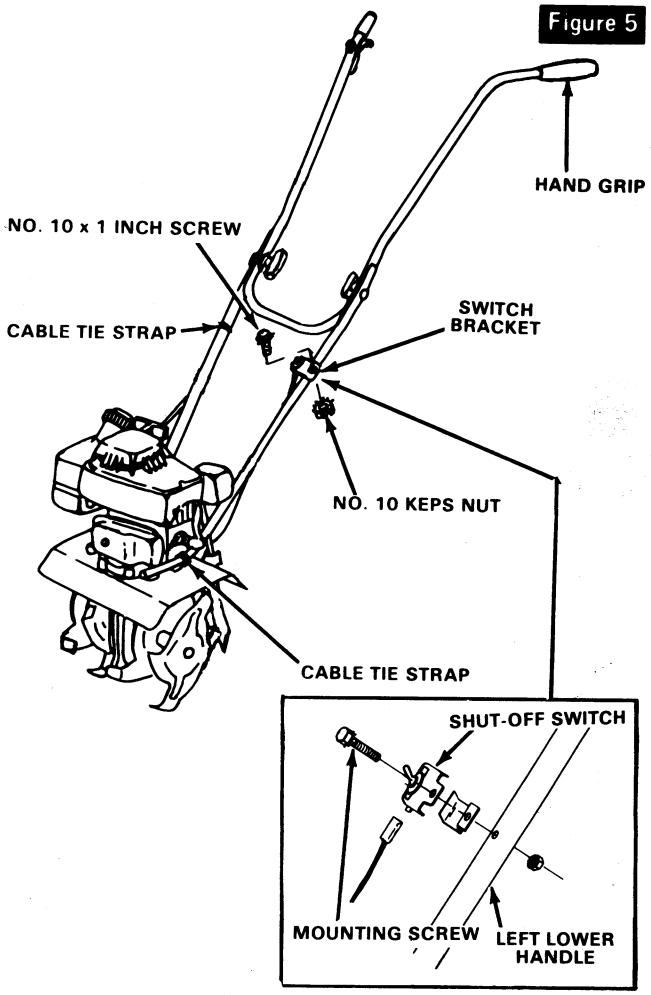
1. Remove nut from screw and attach switch bracket to lower left handle (switch is on inside of handle) with a No. 10 x 1 inch hex head screw and a No. 10 keps nut (shipped installed in switch). Using a 5/16 and a ⅜ inch wrench, tighten securely.

2. Push switch wire onto prong on bottom side of switch (figure 5).

3. Attach switch wire to left lower handle (figure 5) as close to the engine casting as possible with a cable tie strap.

4. Check tie strap installation as instructed in steps 3, 4 and 5 of **Throttle Control Assembly** paragraph.

Figure 5



OPERATION

The operation of this tiller/cultivator can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields while operating tiller/cultivator

- We recommend standard safety glasses or Wide Vision Safety Mask for over spectacles, available at SEARS Retail or Catalog Stores.

Get to know your tiller/cultivator and its controls. Be sure you (or any other operator) have read and understood the **Operational Precautions** listed on page 3 of this manual.

WARNING

KEEP AWAY FROM ROTATING TINES.

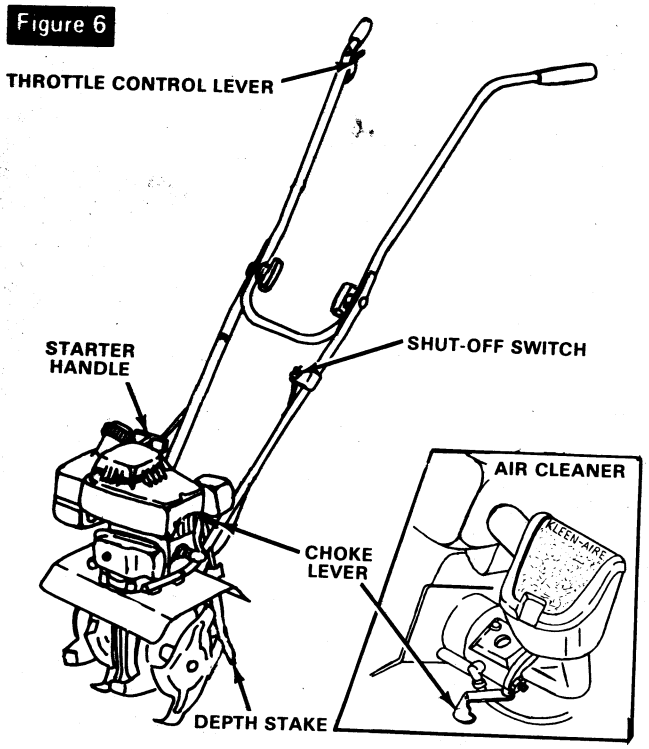
ROTATING TINES CAN CAUSE INJURY

OPERATING CONTROLS

Figure 6 shows the controls on this tiller/cultivator. The controls and their functions are as follows:

- **Throttle Control Lever** - Controls engine speed and tine rotation. This tiller/cultivator is equipped with a centrifugal clutch that engages tine drive system when engine speed is increased.
- **Choke Control Lever** - Used to assist in starting a cold engine.
- **Shut-Off Switch** - Used to stop engine.
- **Starter Handle** - The engine on this tiller/cultivator is equipped with an easy pull recoil starter.
- **Depth Stake** - Used to adjust depth of cut. It also acts as a brake to help the operator control direction and speed of the tiller/cultivator. It is adjusted by removing the hairpin cotter and the clevis pin and moving stake to a different setting (see **Tilling Hints** paragraph).

Figure 6



GASOLINE AND OIL MIXTURE

⚠ DANGER ⚠

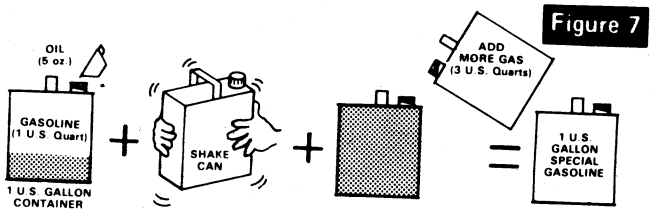
Gasoline is flammable and caution must be used when handling or storing it. Do not fill the fuel tank while tiller/cultivator is running, hot, or when tiller/cultivator is in an enclosed area. Keep away from open flame, electrical spark, and DO NOT SMOKE while mixing fuel or filling the fuel tank. Never fill fuel tank completely; but fill the tank to within ¼ - ½ inch from the bottom of fuel tank fill neck to provide space for expansion of fuel. Always fill fuel tank outdoors and use a funnel or spout to prevent spilling. Make sure to wipe up any spilled fuel before starting the engine.

Store gasoline in a clean, approved container, and keep the cap in place on the container. Keep gasoline in a cool, well ventilated place; never in the house. Never buy more than a 30 day supply of gasoline to assure volatility. Gasoline is intended to be used as a fuel for internal combustion engines; therefore, do not use gasoline for any other purpose. Since many children like the smell of gasoline, keep it out of their reach because the fumes are dangerous to inhale, as well as being explosive.

The two cycle engine used on this tiller/cultivator requires a mixture of gasoline and oil for lubrication of bearings and other moving parts. The correct fuel mixture ratio is 24:1 (see **Fuel Mix Chart**). Gasoline and oil must be premixed in a clean gasoline container. Always use fresh gasoline. **CAUTION: DO NOT use gasoline containing any amount of alcohol as it can cause serious damage or significantly reduce performance.** Mix gasoline and oil (as shown in figure 7) as follows:

1. Pour 1 U.S. quart of fresh, clean UNLEADED REGULAR grade automotive gasoline into a 1 gallon container.
2. Pour 5 ounces of a clean, high quality, SAE 30/40 two cycle oil into the gasoline container. **CAUTION: DO NOT use multiviscosity oils, such as 10W-30 or 10W-40.**
3. Reinstall the cap on the gasoline container and shake container vigorously so the oil mixes with the gasoline.
4. Add an additional 3 U.S. quarts of gasoline to the gallon container and shake the container again.

Figure 7



FUEL MIX CHART (Mixture 24:1)

U.S.		S.I. Metric	
Gas	Oil	Gas	Oil
1 Gal.	5 oz.	4 Liters	.167L
2 Gal.	11 oz.	8 Liters	.333L
5 Gal.	27 oz.	20 Liters	.833L

5. This completes the special gasoline mixing (25:1) procedure. It can now be poured into the tiller/cultivator fuel tank. **IMPORTANT: DO NOT fill fuel tank with gasoline that does not have oil mixed in it. DO NOT use gasoline additives because the engine may be damaged. Shake gasoline container before each filling of fuel tank.**

TO START ENGINE

Before starting engine, be certain you (or any other operator) have read and understood all the instructions on the preceding pages.

1. Fill fuel tank (to ¼ to ½ inch below bottom of fill neck) with fresh fuel mix and reinstall fuel tank cap securely. Never use fuel that may be stale from long periods of storage.

2. Move shut-off switch to ON (down or away from operator) position.

3. Move choke control lever (figure 6) to FULL choke (all the way to the right or toward handle) position. **NOTE:** A warm engine should not required choking.

⚠ DANGER ⚠

DO NOT touch the throttle control lever while starting engine. Tiller/Cultivator will propel itself if engine speed is advanced from idle.

4. Tilt tiller/cultivator back on depth stake to raise tines off ground.

5. Grasp upper right handle firmly to stabilize tiller/cultivator and pull starter handle with short quick pulls. Do not allow the starter rope to snap back, but rewind slowly while keeping hold of the starter handle. **NOTE:** It will take a few pulls on starter handle to feed gas from tank to carburetor.

6. Move choke to ½ choke position when engine begins to flutter.

7. Squeeze and release throttle lever two or three times, then move choke lever to OFF (left or toward engine position. **NOTE:** If tines do not stop when throttle is released, adjust carburetor idle speed as instructed in **Step 5** of **Carburetor Adjustment** paragraph in **Adjustments/Repairs** section of this manual.

8. To stop engine, release throttle lever and move shut-off switch to OFF (up or toward operator) position.

9. If engine becomes flooded, see **Spark Plug Maintenance** paragraph in **Maintenance** section of this manual.

⚠ DANGER ⚠

The muffler and surrounding areas become very hot after running engine. Avoid this area.

TILLING HINTS

Tilling is digging into, turning over, and breaking up packed soil before planting. Loose unpacked soil helps root growth. Best tilling depth is 4 to 6 inches. A tiller will also clear the soil of unwanted vegetation. The decomposition of this vegetation matter enriches the soil. Depending on the climate (rainfall and wind), it may be advisable to till the soil at the end of the growing season to further condition the soil.

The depth stake located on the back of the tiller/cultivator serves a double purpose. It helps regulate the depth of the cut to a uniform level and also acts as a brake to help the operator control the speed of the tiller/cultivator.

Lowering the depth stake will slow the tiller/cultivator and make it till deeper. Raising the depth stake will allow the tiller/cultivator to move faster and till more shallow.

If tiller/cultivator stops forward motion and tries to dig deeper than necessary, move handles from side to side to start forward motion.

Avoid tilling soil that is too dry as the soil pulverizes and produces a dust that will not hold water. Likewise, tilling soil that is too wet will produce unsatisfactory clods besides being hard on the machine.

Better growth will be obtained in tilled ground if a relatively small area is tilled properly and the tilled ground used soon after tilling to preserve the moisture content.

CULTIVATING HINTS

When cultivating (weed killing) it is best to till not deeper than 1½ inches. Tilling deeper will only pull to the surface ungerminated weed seeds. When cultivating, you may want to raise the depth stake or turn it around so point is trailing (or away from tines) to lessen braking action.

When cultivating around plants or close areas you may want to remove outside tines (see **Tine Replacement** paragraph in **Adjustment/Repairs** section of this manual.

TO OPERATE TILLER/CULTIVATOR

1. Start engine, tilt unit back on depth stake until tines are off ground and squeeze throttle control lever all the way up against hand grip. **NOTE:** The engine is governor controlled and should always be run at full throttle.

2. Grasp handles firmly and slowly tilt unit forward to begin tilling action.

3. As the tines begin to make contact with the ground, hold back on the handles so that tines will dig and not ride forward over the ground. Hold back until the tines dig into soil.

4. If tilled depth is too deep or too shallow, proceed as follows:

   A. Move engine shut-off switch to OFF position.

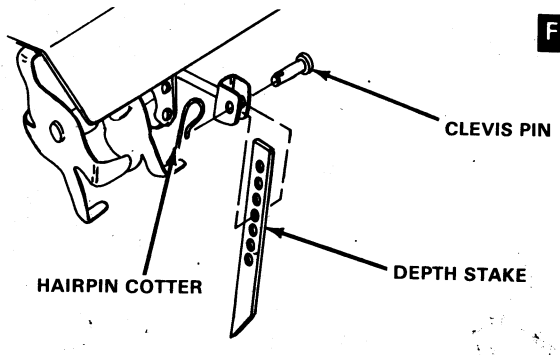
   B. Remove hairpin cotter from clevis pin securing depth stake (figure 8). Remove clevis pin and adjust depth stake upward to dig shallower or downward to dig deeper. Reinstall clevis pin and hairpin cotter.

   C. Move shut-off switch to ON position and repeat steps 1 through 3.

   D. If tilled depth is still unsuitable, repeat steps A through C.

5. In some soil conditions, it may be necessary to move handles from side to side to keep tiller/cultivator moving forward.

Figure 8



KEEP TILLER/CULTIVATOR CLEAN

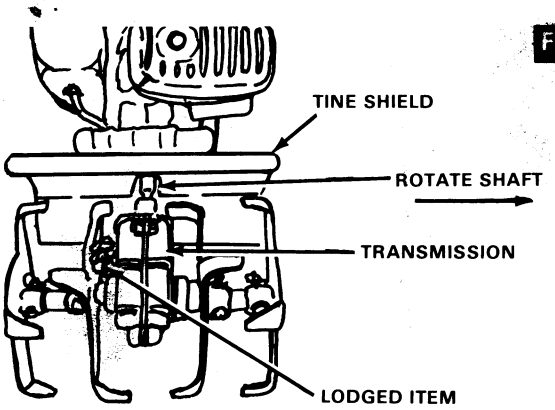
Always remove dirt and debris from tiller/cultivator after each use. Remove any string, wire or vegetation that may become wound around tine shaft. If rocks or other debris become lodged in mechanism and stops tine rotation, proceed as follows:

1. Release throttle control lever and move shut-off switch to OFF position and disconnect spark plug wire.

2. Grasp shaft between transmission and tine shield (figure 9) with a pair of pliers and turn shaft from left to right (viewed from front) to rotate tines backwards.

3. Remove lodged item, reconnect spark plug wire, and restart engine.

Figure 9



MAINTENANCE

The warranty on this tiller/cultivator does not cover items that have been subjected to operator abuse or negligence. To recieve full value from the warranty, operator must maintain tiller/cultivator as instructed in this manual. The following **Maintenance Check List** is supplied to assist operator to properly maintain tiller/cultivator.

MAINTENANCE CHECK LIST	AFTER FIRST 2 HOURS	FREQUENTLY	EVERY 25 HOURS	BEGINNING EACH SEASON	BEFORE STORAGE	SERVICE RECORD (FILL IN DATES AS YOU COMPLETE REGULAR SERVICE)
Tighten All Screws and Nuts	●	●				
Clean/Re-Oil Air Cleaner Filter			●	●		
Check Spark Plug			●	●		
Lubricate Tine Shaft			●		●	
Lubricate Transmission			●	●		

LUBRICATION

Every 25 hours and/or at beginning of each season, gear box should be filled with grease. Tubes of gear lube (part number 51208) are available from SEARS Repair Parts Departments. Acceptable subsitutes are Lubriplate 630AA (Product No. 06787 - 1¾ oz. tube) or Lubriplate GR-132 (Product No. 15892 - 10 oz. tube) Tine shaft should have oil applied before storage and after cleaning if tiller/cultivator is flushed with water. **CAUTION: Allow transmission to cool before filling with grease.**

1. Remove both right side tines (See **Adjustments/ Repairs** section).

2. Remove air vent screw (figure 10) from top right side of transmission.

3. Remove hex socket head plug (figure 10) from lower right side of transmission.

4. Using a tube of grease (part no. 51208) or a grease gun, fill transmission through lower hole until new grease (white) begins to come out of top hole where screw was removed. **NOTE:** This may require more than 1 tube of grease.

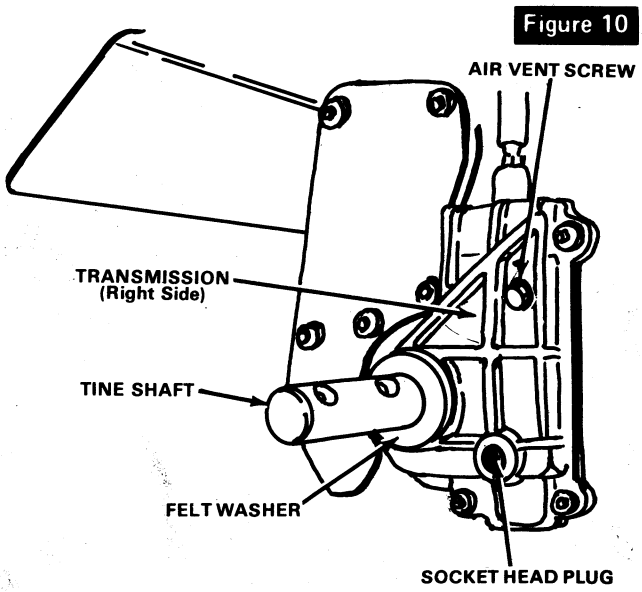
5. Reinstall top screw and bottom plug.

6. Check condition of felt washer in side of transmission at tine shaft. Replace washer if it is damaged (see **Unit Repair Parts** section).

7. Clean tine shaft and spread a few drops of oil on shaft in tine placement areas. Reinstall tines.

8. Remove left side tines. Check felt washer for damage, clean and oil tine shaft. Reinstall tines.

Figure 10



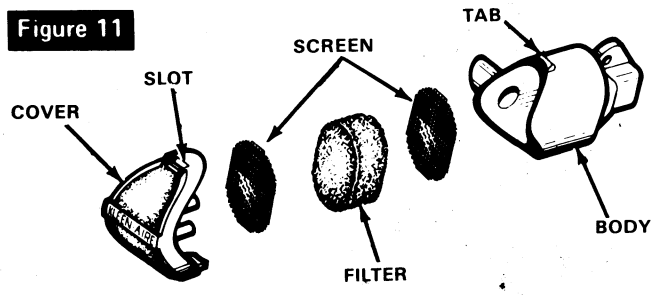
AIR CLEANER MAINTENANCE

The air cleaner filter should be cleaned and re-oiled after every 25 hours of use. Clean more often under dusty conditions. **IMPORTANT:** The engine can be worn out in a very short period of time if dirt or grit is allowed to enter engine. To clean air filter.

1. Pull cover (figure 11) off tabs on air cleaner body.

2. Remove top screen, filter and bottom screen. Wipe inside of housing body clean.

Figure 11



3. Clean filter by washing in a non-flammable solvent or strong solution of water and household detergent. Squeeze out all liquid.

4. Cover ends and side of filter with same oil used in fuel mixture. Knead filter between fingers to distribute oil throughout the filter and to squeeze out excess oil.

5. Clean screens in water/detergent solution and air dry.

6. Service air filter carefully, inspecting for deterioration or damage. A defective, improperly serviced, or misassembled air filter will allow dirt particles to enter the engine.

7. Reassemble filter as shown in figure 11. Place cover onto body so that groove in cover aligns with top of body. Snap cover over lugs on top of body.

CAUTION

Never run the engine without the air cleaner element installed. A defective air cleaner can result in loss of engine power and can cause excessive wear or damage to engine components if dirt or dust is permitted to enter engine through carburetor. An air cleaner that is clogged with dust or dirt should be cleaned and reoiled.

SPARK PLUG MAINTENANCE

If engine is flooded, clean area around plug base to prevent foreign material from entering cylinders when the plug is removed. Remove and dry plug. Regap electrodes to .035 if necessary. If new spark plug is needed, refer to **Engine Repair Parts** section of this manual for proper replacement spark plug. Tighten plug firmly. If torque wrench is available, torgue plug to 15 foot pounds.

CYLINDER EXHAUST PORTS

The cylinder exhaust ports should be cleaned after each seventy-five (75) to one hundred (100) hours of operation. For this procedure we recommend that you take your unit to a technician trained to work on two cycle engines such as a SEARS Service Center.

ADJUSTMENTS/REPAIRS

TINE REPLACEMENT

Tiller/cultivator is left hand or right hand as viewed from the operator's position behind machine.

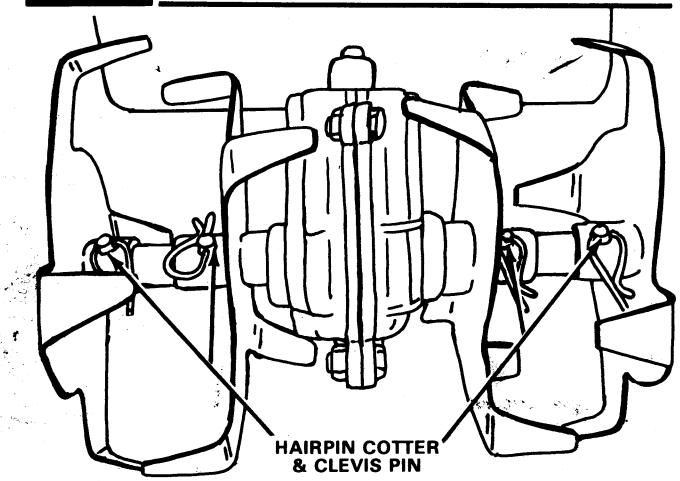
All four tines on this unit are different and cannot be interchanged. Tines must be properly installed as shown in figure 12 and 13 or tiller/cultivator will not function properly. **NOTE:** Outside tines may be removed to reduce tilling width to about 7 inches, for close work around plants or in small areas, if desired. When reinstalling outside tines see Step 5.

⚠ DANGER ⚠

Tines are self-sharpening and will become quite sharp from use. Handle carefully.

Figure 12

FRONT VIEW



Tines will all wear fairly even. If tines are being replaced because of wear, we recommend that all four tines be replaced at same time. To replace tines:

1. Turn switch to OFF position and disconnect spark plug wire.

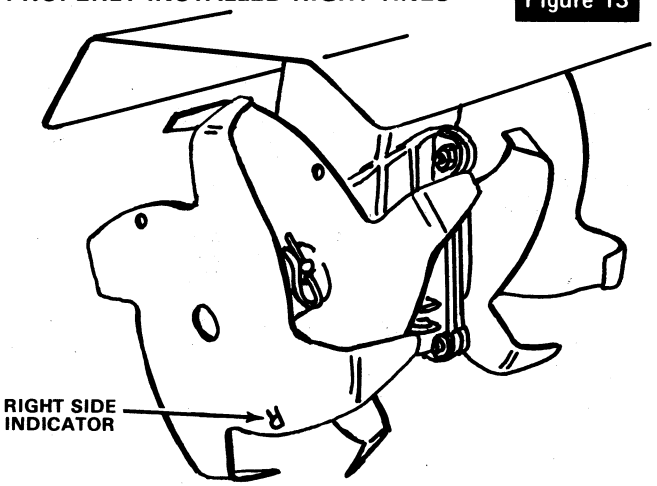
2. Remove hairpin cotters and clevis pins from tines on one side of the unit and remove tines.

3. Clean tine shaft and oil shaft at tine locations.

4. Place inside tine on tine shaft and reinstall clevis pin and hairpin cotter. **NOTE:** When properly installed, a letter "R" will be visible from outside on tine mounted on right side of unit (letter "L" on left side). This letter should appear opposite the small hole in side of tine.

PROPERLY INSTALLED RIGHT TINES

Figure 13



5. Place outside tine on tine shaft and reinstall clevis pin and hairpin cotter. **NOTE:** Outside tine cutting tips will all bend inward toward inside tine and also have a letter "R" or "L" visible from outside.

6. Repeat steps 1 through 4 on opposite side of unit.

7. Check to make sure tines are installed on proper sides of unit. The letter "R" on right side, "L" on left side must be visible from outside at all times.

CARBURETOR ADJUSTMENT

A dirty air cleaner will cause engine to run improperly and/or smoke excessively. Be sure air cleaner is clean before adjusting carburetor. Never make unnecessary adjustments to the carburetor. The carburetor was set at the factory to operate efficiently for most applications. However, if adjustments are required, we recommend you contact a competent repairman such as at a SEARS Service Center. If you feel that you are competent to make carburetor adjustments, proceed as follows.

⚠ DANGER ⚠

Use extreme care when making adjustments that require engine to be running. Keep hands, feet, hair and loose clothing away from any moving part.

1. Turn mixture adjustment screw (figure 14) clockwise (↷) to close. **IMPORTANT:** Tighten adjusting screw finger tight only to prevent damage to carburetor or adjusting screw.

2. Turn mixture screw open counterclockwise (↶) one (1) turn.

3. Start the engine (see **To Start Engine** paragraph) and let it warm up approximately 3 to 5 minutes. Do not adjust carburetor when engine is cold. **NOTE:** If engine falters or stops after choke lever is moved to OFF position, open the mixture adjusting screw an additional ⅛ turn counter-clockwise (↶).

4. With engine running, release throttle lever (idle position) to make mixture adjustments.

   A. Turn mixture adjusting screw (figure 14) slowly clockwise (↷) until engine falters. Remember this location.

   B. Turn mixture adjusting screw slowly counterclockwise (↶) until engine just starts to sputter. Remember this location.

   C. Turn mixture adjusting screw clockwise (↷) until it is halfway between first position where engine faltered and second position where engine started to sputter.

5. Idle speed may need to be adjusted after making mixture adjustment. If tines do not turn when engine is running and throttle is released, idle speed will not need adjusting. If tines do turn when throttle is released, proceed as follows:

   A. Have someone hold tiller/cultivator back on depth stake with tines off ground.

   B. Start engine.

   C. With throttle in released (idle) position, turn counterclockwise (↶) until tines stop rotating.

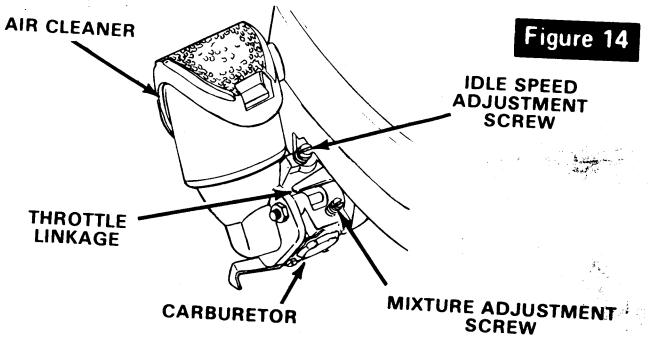


Figure 14

⚠ DANGER ⚠

Never tamper with engine governor which is factory set for proper engine speed. Over-speeding engine may increase the danger of personal injury and will void engine warranty. If you think the engine governor high speed needs adjusting, contact your nearest SEARS Service Center who has the proper equipment and experience to make any necessary adjustments.

STORAGE

⚠ DANGER ⚠

Never store engine with fuel in tank indoors or in enclosed, poorly ventilated enclosures, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, etc.

Handle gasoline carefully. It is highly flammable and careless use could result in serious fire damage to your person and/or property.

Drain fuel into approved container outdoors, away from open flame.

The tiller/cultivator should be immediately prepared for storage at the end of the season or if the unit is to be un-used for 30 days or more.

1. Remove all fuel mixture from fuel tank to prevent gum deposits from forming and causing possible malfunction of engine. **Drain fuel into approved container outdoors, away from open flame.**

2. Start and run engine until it stops due to lack of fuel.

3. Pull starter handle slowly until resistance is felt due to compression pressure, then stop. Release starter handle **slowly** to prevent engine from reversing due to compression pressure. This position will close the intake and exhaust parts to prevent corrosion of the piston and cylinder bore.

4. Clean tiller/cultivator throughly, removing all dirt and debris from unit and engine.

5. Remove tines and oil tine shaft and reinstall tines (see **Adjustments/Repairs** section).

6. Loosen tee knobs that secure upper handle to lower handle.

7. Carefully fold upper handle down being sure that throttle cable is not kinked. Tighten tee knobs.

8. The cross piece of upper handle (between lower handles) can now be used as a carry handle or can be hooked over a wall hook to store tiller/cultivator up off floor out of the way.

9. Store tiller/cultivator in a protected area and cover for additional protection.

IMPORTANT: A yearly checkup or tuneup by a SEARS Service Center is a good way of insuring that your tiller/cultivator will provide maximum performance for the next season.

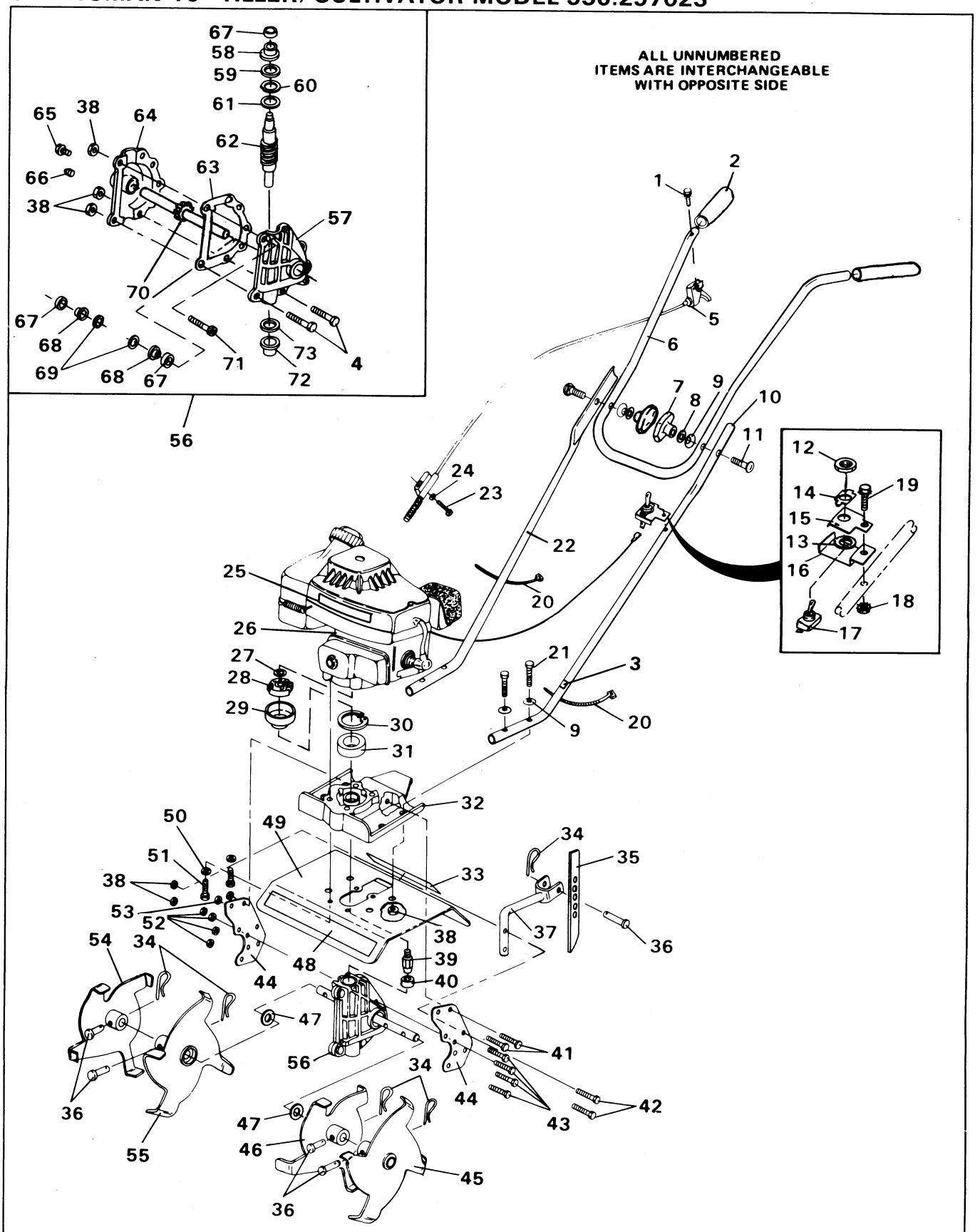
TROUBLE SHOOTING

DANGER: ALWAYS DISCONNECT SPARK PLUG WIRE BEFORE ATTEMPTING ANY REMEDY.

TROUBLE	LOOK FOR	REMEDY
Dificult starting; Engine runs erratic; Engine will not run at full speed	Stale fuel mixture	Drain fuel tank. Fill with fresh mixture.
	Too much oil in mixture	Check fuel mix chart and mix fresh fuel.
	Dirt in fuel tank or out of fuel	Clean fuel tank. Fuel tank should be half full when starting engine.
	Carburetor out of adjustment	Adjust carburetor.
	Fouled spark plug	Clean and regap plug.
	Plugged air cleaner	Clean and re-oil air cleaner.
Engine speed does not increase properly	Debris interfering with throttle linkage.	Blow dirt and debris off top of carburetor.
Engine smokes excessively	Plugged air cleaner	Clean and re-oil air cleaner.
	Too much oil in fuel mixture	Check fuel mix chart and mix fresh fuel.
Tines continue to rotate when throttle is released	Carburetor out of adjustment	Adjust carburetor idle speed. See **Carburetor Adjustment** paragraph in **Adjustments/Repairs** section of this manual.
Tines will not turn	Foreign object lodged in tines	Remove lodged item. See **Keep Tiller/Cultivator Clean** paragraph in **Operation** section of this manual.
Unit does not till properly	Incorrect tine installation	Check tines for proper installation. See **Tine Replacement** paragraph in **Adjustments/Repairs** section of this manual.

UNIT REPAIR PARTS

CRAFTSMAN 10" TILLER/CULTIVATOR MODEL 536.297023



CRAFTSMAN 10" TILLER/CULTIVATOR MODEL 536.297023

Key No.	Part No.	Description
1	9426635	Screw, Hex Hd, No. 10-16 x 1½ In.
2	56778	Hand Grip
3	70380	Decal, Choke
4	180020	*Screw, Hex Hd, ¼-20 x ¾ In.
5	57774	Throttle Control
6	56237	Handle, Upper
7	45576	Tee Knob
8	120393	*Flatwasher, 11/32 In.
9	8728	Formed Washer
10	56239	Handle, Lower, L.H.
11	35475	Screw, Curved Hd, 5/16-18 x 1⅝ In.
12	57029	Nut, Hex 15/32-32 Thd.
13	45878	Lockwasher, Switch
14	56248	Plate, On/Off Indicator
15	56236	Bracket, Switch Mount, Upper
16	56822	Bracket, Switch, Lower
17	56143	Switch
18	271166	*Nut, Keps, No. 10-24 Thd.
19	57019	*Screw, Wa Hd, Ex Lock No. 10-24 x 1-1/16 In.
20	55050	Cable Tie Strap
21	180033	*Screw, Hex Hd, ¼-20 x 1⅜ In.
22	56238	Handle, Lower, R.H.
23	56781	Screw, Hex Hd, No. 8-32 x 1⅛ In.
24	9414106	Flatwasher, 3/16 In.
25	70321	Decal, Craftsman
26	14564	Engine Model No. 200.651001 (See **Engine Repair Parts** section)
27	56694	Washer
28	56693	Rotor
29	56692	Drum
30	56120	Snap Ring
31	56132	Bearing
32	55815	Casting, Engine Mount
33	70328	Decal, Caution
34	56180	Hairpin Cotter
35	56099	Depth Stake
36	56123	Pin, Clevis
37	56138	Bracket, Depth Stake Assy.
38	9424215	Locknut, ¼-20 Thd.
39	56612	Shaft

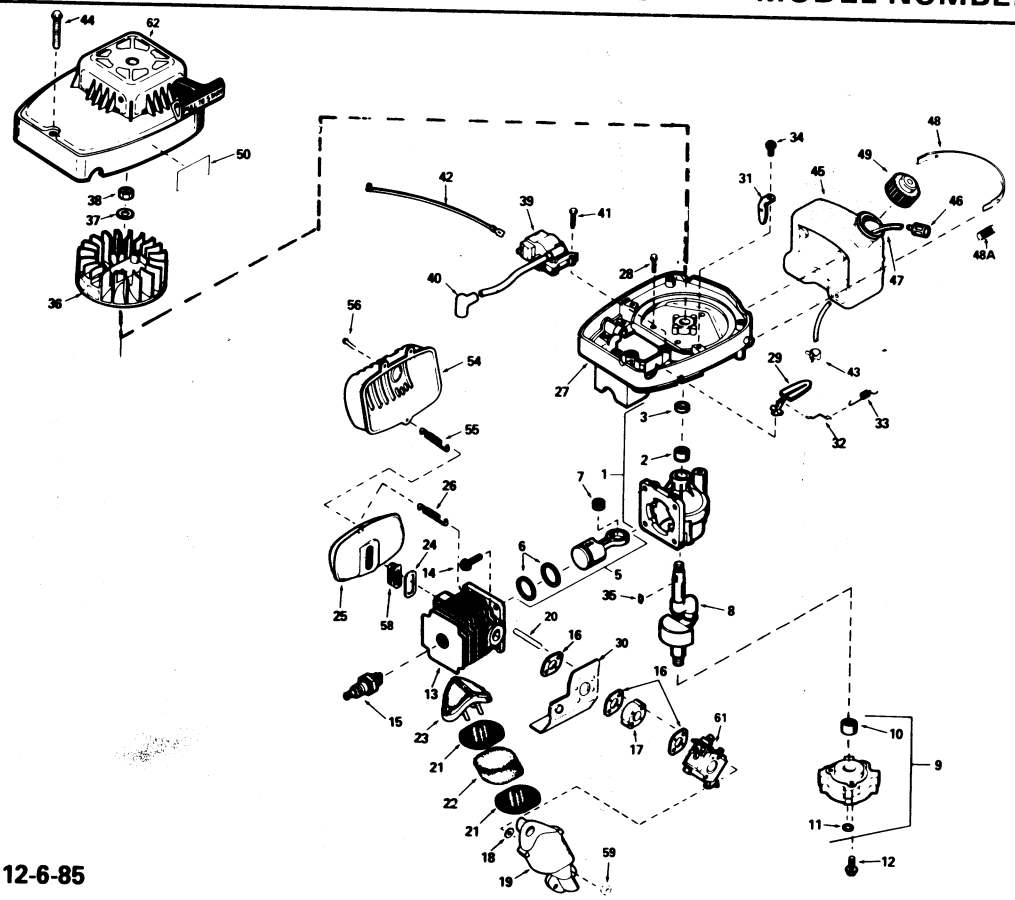
*Standard Hardware Items - May Be Purchased Locally.

Key No.	Part No.	Description
40	56613	Coupling
41	180078	*Screw, Hex Hd, 5/16-18 x ⅞ In.
42	180022	*Screw, Hex Hd, ¼-20 x 1 In.
43	56131	Screw, Hex Hd, ¼-20 x 1 In.
44	56096	Plate, Support
45	56155	Outer Tine Assy., L.H.
46	56157	Inner Tine Assy., L.H.
47	56158	Washer, Felt
48	70322	Decal, Sears
49	56097	Tine Shield
50	120380	*Lockwasher, Split, ¼ In.
51	180037	*Screw, Hex Hd, ¼-20 x 1⅝ In.
52	56862	Locknut, ¼-20 Thd.
53	9422295	Locknut, 5/16-18 Thd.
54	56154	Outer Tine Assy., R.H.
55	56156	Inner Tine Assy., R.H.
56	56160	Transmission Assy.
57	56363	Gear Case Assy., L.H.
58	56208	Bearing, Flange
59	56125	Washer, Thrust
60	56124	Needle Bearing
61	56113	Washer, Thrust
62	55868	Shaft, Worm
63	51279	Gasket, Gear Case
64	56364	Gear Case Assy., R.H.
65	35258	Screw, Hex Wa. Tap, No. 10-24 x ⅜ In.
66	56423	Pipe Plug
67	24274	Oil Seal
68	50304	Bearing, Flange
69	56115	Washer, Thrust
70	56159	Tine Shaft & Gear Assy.
71	426816	Screw, Soc. Hd, ¼-20 x ¾ In.
72	50221	Bearing, Flange
73	996418	Flatwasher
74	63018	Owner's Manual (Not Illustrated)

ENGINE REPAIR PARTS

CRAFTSMAN 2-CYCLE ENGINE

MODEL NUMBER 200.651001



Revised 12-6-85

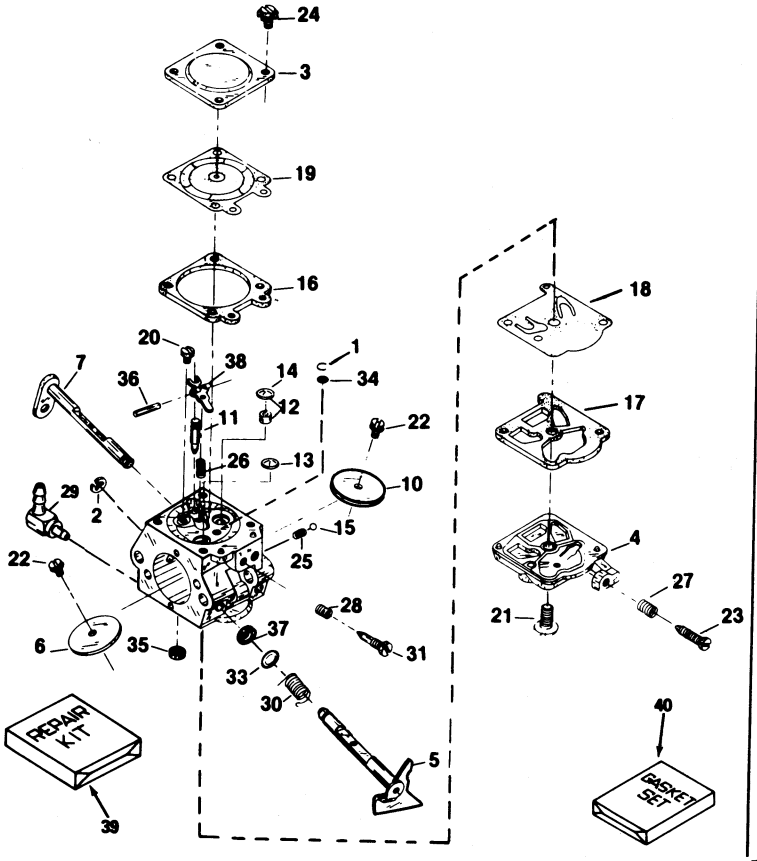
Ref. No.	Part No.	Part Name
1	270288	Crankcase Assy. (Incl. nos. 2 & 3)
2	530153A	Bearing, Cartridge
3	510328	Seal, Oil
5	310276	Piston & Rod Assy. (Incl. Nos. 6 & 7)
6	310271	Ring Set, Piston
7	530154	Bearing Set, Needle (23 Needles)
8	290556	Crankshaft
9	270290	Cover Assy., Crankcase (Incl. Nos. 10 & 11)
10	530155A	Bearing, Cartridge
11	510329	Seal, Oil
12	650844	Screw, Hex washer hd. taptite, 1/4-20 x 3/4
13	250287	Cylinder
14	650888	Screw, Torx Int. Drive flanged hd., 1/4-20 x 43/64
15	611100	Plug, Spark (Champion CJ-6Y or equivalent)
16	510327	Gasket, Carburetor
17	570648	Spacer, Carburetor
18	570649	"O" Ring, Air cleaner
19	450238	Body, Air cleaner
20	650858	Stud, Air cleaner
21	450239	Screen, Air cleaner
22	450240	Element, Air cleaner
23	450241	Cover, Air cleaner
24	510336	Gasket, Exhaust
25	390303	Muffler
26	570650	Spring, Muffler
27	350416A	Base, Blower housing
28	650867	Screw, Hex washer hd. taptite thread rolling, 10-24 x 1/2
29	490303	Vane, Air
30	570666	Baffle, Carburetor

Ref. No.	Part No.	Part Name
31	570667	Lever, Speed adjusting
32	490300	Link, Governor
33	570672	Spring, Governor
34	650847	Screw, Hex washer hd. taptite, 8-32 x 1/2
35	611054	Key, Flywheel
36	611055	Flywheel
37	650848	Washer, Belleville
38	650849	Nut, Flywheel (3/8-24)
39	611056	Coil & Lamination Assy. (Solid State) (Incl. No. 40)
40	610118	Cover, Spark plug
41	650814	Screw, Hex hd. Sems, 10-24 x 1
42	611108	Wire, Cut-off
43	410253	Clamp, Fuel line
44	650850	Screw, Hex washer hd. taptite thread rolling, 8-32 x 1-9/16
45	410249	Tank, Fuel (1 pint)
46	410245	Fitting & Filter Assy., Fuel
47	410246A	Line, Fuel
48	410254A	Strap, Fuel tank
48A	570668	Spring, Tank strap
49	410248	Cap Assy., Fuel
50	550228	Decal, Instruction
54	390299	Heat Shield, Muffler
55	570654	Spring, Heat shield
56	650847	Screw, Hex washer hd. taptite thread rolling, 8-32 x 1/2
58	390301	Screen, Spark arrestor
59	650580	Nut, Lock, 10-24
61	632414	Carburetor (Incl. No. 16)
62	590614	Starter & Housing Assy., Rewind
	694997	Owners Parts List

CRAFTSMAN 2-CYCLE ENGINE

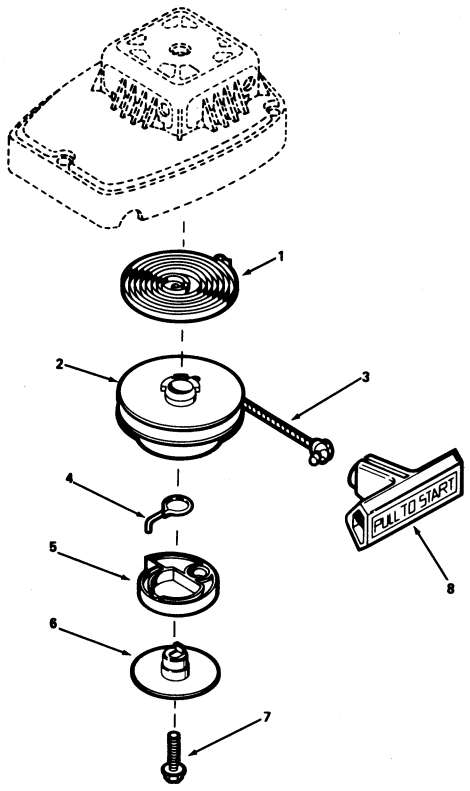
MODEL NUMBER 200.651001

CARBURETOR NUMBER 632414



Ref. No.	Part No.	Part Name
	632414	Carburetor
1	*632287	Ring, Screen retaining
2	632288	Ring, Shaft retainer
3	632289	Cover, Metering diaphragm
4	632290	Cover, Pump
5	632418	Shaft Assy., Throttle
6	632292	Shutter, Throttle
7	632293	Shaft Assy., Choke
10	632294	Shutter, Choke
11	*632295	Valve, Inlet needle
12	632296	Check Valve, Nozzle
13	*632297	Plug, Welch (5/16")
14	*632298	Plug, Welch (1/4")
15	*632299	Ball, Choke friction
16	**632300A	Gasket, Diaphragm
17	**632301	Gasket, Pump
18	**632302	Diaphragm, Pump
19	**632303	Diaphragm Assy.
20	*632304	Screw, Metering lever pin
21	632305	Screw, Pump cover
22	*650506	Screw, Shutter
23	632306	Screw, Idle speed
24	650506	Screw, Metering cover
25	*632307	Spring, Choke friction
26	*632376	Spring, Metering lever
27	632309	Spring, Idle speed screw
28	*632310	Spring, Idle needle
29	632324	Fitting, Fuel line
30	*632311	Spring, Throttle compression
31	*632312	Needle, Idle
33	632313	Washer, Throttle shaft
34	*632314	Screen, Check valve
35	*632315	Screen, Fuel inlet
36	*632316	Pin, Metering
37	632317	Seal, Throttle shaft
38	*632318	Lever, Metering
39	632377	Repair Kit (Incl. items marked *)
40	*632320A	Gasket Kit (Incl. items marked **)

REWIND STARTER & HOUSING ASSEMBLY NUMBER 590614



Ref. No.	Part No.	Part Name
	590614	Starter & Housing Assy., Rewind
1	590562	Spring, Rewind
2	590563	Pulley, Starter
3	590564	Rope, Starter (#4 rope, 39" long)
4	590565	Spring, Brake
5	590566	Pawl
6	590567	Retainer, Pawl
7	590568	Screw, Retainer
8	590452	Handle, Starter

SEARS

owner's manual

MODEL NO. 536.297023

SEARS SERVICE is at YOUR SERVICE

MADE IN U.S.A.

HOW TO ORDER REPAIR PARTS

The Model Number will be found on a plate attached to the unit. Always mention the Model Number when requesting service or repair parts for your CRAFTSMAN TILLER/CULTIVATOR.

All parts listed herein may be ordered from any SEARS Service Center/Department and most Retail Stores. If the parts you need are not stocked locally, your order will be electronically transmitted to a SEARS Repair Parts Distribution Center for expedited handling.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER - **536.297023**
4. The NAME OF ITEM - **Tiller/Cultivator**
5. The ENGINE MODEL NUMBER - **200.651001**

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